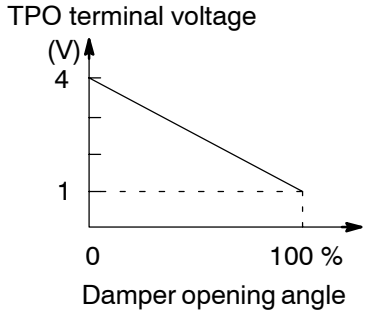
DTC	B1433	AIR OUTLET DAMPER POSITION SENSOR CIRCUIT

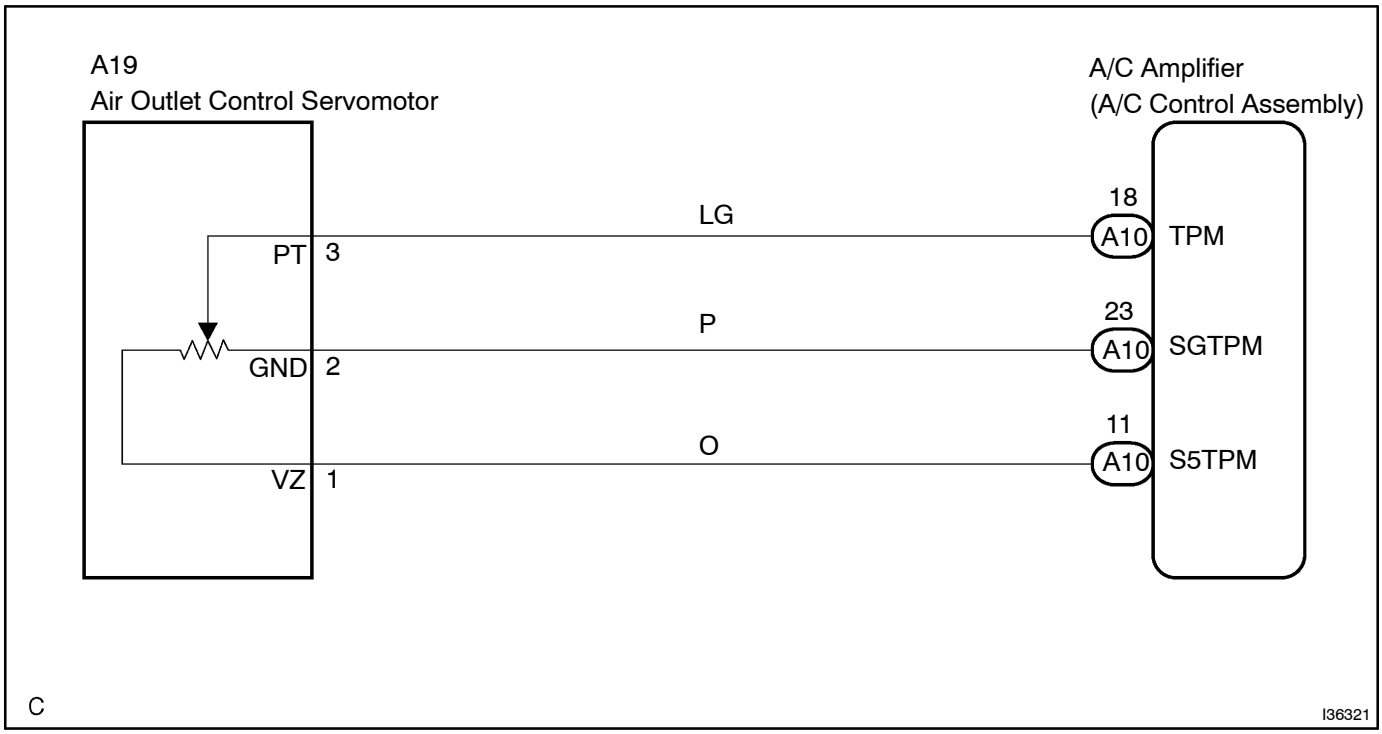
CIRCUIT DESCRIPTION



This sensor detects the position of the air outlet control servomotor and sends the appropriate signals to the A/C amplifier. The position sensor is built in the air outlet control servomotor. The potentiometer's resistance changes as the air outlet control servomotor arm moves.
It outputs voltage (5V) that is input to terminal 1 (VZ) and terminal 3 (PT) via the variable resister, and then to the A/C amplifier. The A/C amplifier reads the arm position with the input voltage from the potentiometer.

DTC No.	Detection Item	Trouble Area
B1433	Open or short in power source circuit in air outlet damper position sensor circuit.	• Air outlet control servomotor (air outlet damper position sensor) • Harness or connector between air outlet control servomotor and A/C amplifier • A/C amplifier

WIRING DIAGRAM



INSPECTION PROCEDURE

1	READ VALUE ON INTELLIGENT TESTER II

(a) Connect the intelligent tester II to DLC3.
(b) Turn the power switch ON and push the intelligent tester II main switch ON.
(c) Select the items below in the DATA LIST, and read the displays on the intelligent tester II.

DATA LIST / AIR CONDITIONER:

Item	Measurement Item/Display (Range)	Normal Condition	Diagnostic Note
Air outlet damper position (A/O Damp Pos)	Air outlet damper position / min.: –14% max.: 113.5%	Damper is at "FACE": –10.0% Damper is at "FACE/FOOT": 12.0% Damper is at "FOOT" (Manual): 33.5% or 69.0% (33.5%)*1 Damper is at "FOOT" (Auto): 49.0% or 69.0% Damper is at "FACE/DEF": 69.0% or 95.0% Damper is at "DEF": 110.0%	Open in the circuit: 50.0%
Air outlet damper target position (A/O Damp Targ)	Air outlet damper target position / min.: –14% max.: 113.5%	Damper is at "FACE": –10.0% Damper is at "FACE/FOOT": 12.0% Damper is at "FOOT" (Manual): 33.5% or 69.0% (33.5%)*1 Damper is at "FOOT" (Auto): 49.0% or 69.0% Damper is at "FACE/DEF": 69.0% or 95.0% Damper is at "DEF": 110.0%	Open in the circuit: 50.0%

HINT:
*1: Australian models

OK:

The displayed is as specified in the normal condition.

Result:

NG	A
OK (Checking from the PROBLEM SYMPTOM TABLE)	B
OK (Checking from the DTC)	C

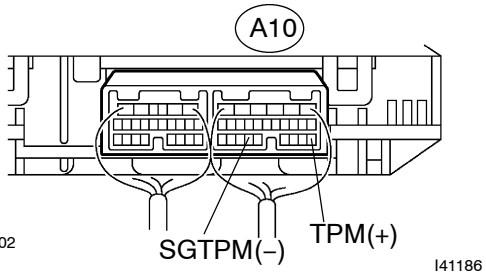
B → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (SEE PAGE 05–1035)**

C → **REPLACE AIR CONDITIONING AMPLIFIER (SEE PAGE 55–52)**

A

2 INSPECT AIR CONDITIONING AMPLIFIER(TPM – SGTPM)

Air Conditioning Amplifier Connector Wire Harness View:



(a) Remove the A/C amplifier with connectors still connected.

(b) Measure the voltage according to the value(s) in the table below.

Standard:

Tester connection	Condition	Specified condition
A10–18 (TPM) – A10–23 (SGTPM)	Power switch ON (ON) FACE position	3.97 to 4.07 V
A10–18 (TPM) – A10–23 (SGTPM)	Power switch ON (ON) DEF position	0.97 to 1.03 V

HINT:

As the air outlet servomotor is moved from FACE side to DEF side, the voltage decreases gradually without interruption.

Result:

NG	A
OK (Checking from the PROBLEM SYMPTOMS TABLE)	B
OK (Checking from the DTC)	C

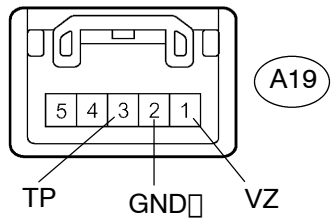
B → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (SEE PAGE 05–1035)**

C → **REPLACE AIR CONDITIONING AMPLIFIER (SEE PAGE 55–52)**

A

3 INSPECT AIR OUTLET CONTROL SERVOMOTOR

Air Outlet Control Servomotor Connector
Front View:



(a) Remove the air outlet control servomotor.
(b) Disconnect the connector from air inlet control servomotor.
(c) Measure the resistance according to the value(s) in the table below.

Standard:

Tester connection	Condition	Specified condition
A19–1 (VZ) – A19–2 (GND)	Always	4.2 to 7.2 kΩ

(d) Measure the resistance according to the value(s) in the table below.

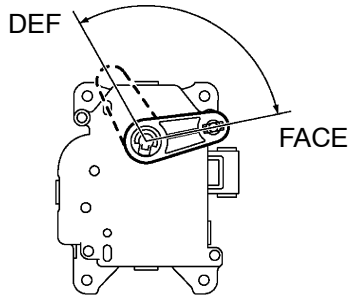
HINT:
See page 05–1097 for operation procedure for air outlet control servomotor.

Standard:

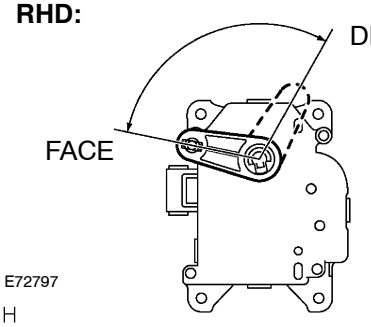
Tester connection	Condition	Specified condition
A19–3 (PT) – A19–2 (GND)	DEF position	0.6 to 1.1 kΩ
A19–3 (PT) – A19–2 (GND)	FACE position	3.6 to 6.7 kΩ

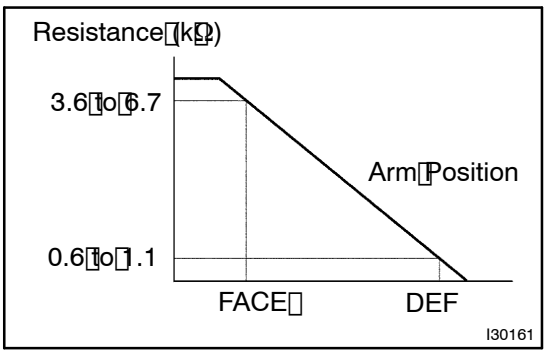
(e) As the air outlet control servomotor moved from DEF side to FACE side, the resistance decreases gradually without interruption.

LHD:



RHD:



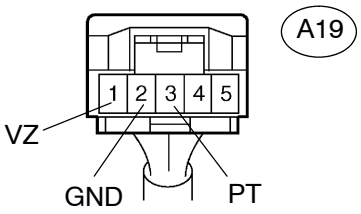


NG → **REPLACE AIR OUTLET CONTROL SERVOMOTOR**

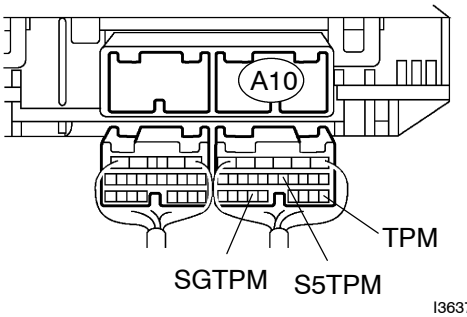
OK

4	CHECK HARNESS AND CONNECTOR(AIR OUTLET CONTROL SERVOMOTOR – AIR CONDITIONING AMPLIFIER) (SEE PAGE 01–46)

Air Outlet Control Servomotor Connector Front View:



Air Conditioning Amplifier Connector Wire Harness View:



(a) Disconnect the connector from air outlet control servomotor.

(b) Measure the resistance according to the value(s) in the table below.

Tester connection	Condition	Specified condition
A10–18 (TPM) – A19–3 (PT)	Always	Below 1 Ω
A10–23 (SGTPM) – A19–2 (GND)	Always	Below 1 Ω
A10–11 (S5TPM) – A19–1 (VZ)	Always	Below 1 Ω
A10–18 (TPM) – Body ground	Always	10 kΩ or higher
A10–23 (SGTPM) – Body ground	Always	10 kΩ or higher
A10–11 (S5TPM) – Body ground	Always	10 kΩ or higher

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

REPLACE AIR CONDITIONING AMPLIFIER (SEE PAGE 55–52)